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| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | LOUIE, WAI SING | |
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| | | | 2814 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,109

Applicant(s)

MASUDA ET AL.

Examiner

Wai-Sing Louie

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 20-28 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 20-28 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/2/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8-13, and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lapointe et al. (US 6,100,478) in view of Srivastava et al. (US 6,469,322).

With regard to claims 1 and 24, Lapointe et al. disclose an electroluminescent keypad (col. 3, line 42 to col. 7, line 67 and fig. 2), comprising:

- At least one light source 19, in which light of the light source is guided and emitted from an operation member 15 having translucent properties via an optical waveguide 17. Although, elastomeric sheet 17 does not specifically state that is a waveguide. However, since elastomeric sheet 17 is made of translucent rubbery material (col. 3, lines 59-63), which is opaque and transmits light, as the claimed structure, it is clear, that such a structure results in the transmitting light as a waveguide and is thus an inherent feature of the claimed semiconductor device.
- Lapointe et al. disclose a phosphor 31 in the light source 19 and is contained in a path through which the light of the light source 19 is guided (col. 5, lines 20-25), but do not disclose the light source 19 is emitting visible light by being excited by the phosphor. However, Srivastava et al. disclose the light emitted by a GaN-

based semiconductor LED 32 be converted by a phosphor material 24 into white light (Srivastava co 4, lines 5-20). Srivastava et al. teach the phosphor material could improve the intensity and adjust the color of the light emitted (Srivastava col. 4, lines 28-30). Therefore, it would have been obvious to one of ordinary skill in the art to modify Lapointe's device with the teaching of Srivastava et al. to provide the phosphor material to convert the light emitted by the light source to visible light in order to improve the intensity and adjust the color of the light emitted.

With regard to claims 2, 5, and 27, Lapointe et al. disclose the operating member 15 is constituted by a plurality of keytops and the phosphor is contained in the plurality of keytops (fig. 1).

With regard to claim 3, Lapointe et al. disclose the phosphor 31 is contained in a vicinity of the light source 19 (col. 5, lines 20-25).

With regard to claims 4, 6, and 8, Lapointe modified by Srivastava et al. disclose the phosphor is contained by a plurality of types of phosphor that emit light with different colors each other (Srivastava col. 4, lines 8-18).

With regard to claims 9, 12, and 26, Lapointe et al. disclose the light source 19 is a LED (col. 5, lines 20-25).

With regard to claims 10, 13, and 28, Lapointe et al. disclose the electronic equipment 11 is a mobile phone (col. 3, line 52).

With regard to claim 11, Lapointe et al. disclose the plurality of keytops 15 and the optical waveguide 17 are integrated into one piece (fig. 1 and 2). The integrated piece of keytop

15 and waveguide 17 is configured to be removable with respect to a main body 13 of the electronic equipment 11 (fig. 1).

With regard to claims 20-23, these claims is based on the non-elected species, therefore, will not be examined.

With regard to claim 25, Lapointe modified by Srivastava et al. disclose the light source emits blue/UV light, where the wavelength is about 320-380 nm (Srivastava col. 3, lines 3-12). Since the applicant has not established the criticality of wavelength stated and since these wavelengths are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to use these values in the device. Where patentability is said to be based upon particular chosen dimension or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With regard to claim 32, LaPointe discloses the phosphor material is in the electroluminescent layer 31 (col. 5, lines 20-25). Therefore, the phosphor is substrate surrounds the light source.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lapointe et al. (US 6,100,478) modified by Srivastava et al. (US 6,469,322) as applied to claim 1 above, and further in view of Chien (US 5,752,337).

With regard to claim 7, Lapointe et al. modified by Srivastava et al. do not disclose the plurality of types of phosphors are arranged such that patterns, designs, letters symbols or an arbitrary combination that can be recognized with their light with the different colors. However,

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Chien discloses a multi-color electroluminescent panel having a message display 37, where the letters have different color (Chien col. 4, lines 45-54). Chien teaches the multi-color electroluminescent panel obtains a desire lighting effect by increasing the flexibility of colorings, patterns, and special effects (Chien col. 2, lines 3-8). Hence, it would have been obvious at the time the invention was made to modify Lapointe's device with the teaching of Srivastava et al. and Chien to provide a multi-color patterns on the letters in order to obtain a desire lighting effect by increasing the flexibility of colorings, patterns, and special effects.

Response to Arguments

Applicant's arguments filed 2/2/06 have been fully considered but they are not persuasive.

- Applicant argues that element 17 in LaPointe is not a waveguide but is an extension of the key 15. The definition of a waveguide in Webster's dictionary (10th Edition) is:

“A device (as a duct, coaxial cable, or glass fiber) designed to confine and direct the propagation of electro-magnetic wave (as light).”

The current specification does not clearly define the material of construction and physical properties of the waveguide in the claimed invention. In paragraph [0009]:

[0009] Furthermore, a flexible optical waveguide 3 is disposed so as to fill the remaining space between the inner surface of the housing 5 and the

printed substrate 7, and the light emitted from the LED 2 is guided through the optical waveguide 3 to surrounding portions. In FIG. 8, the keytop 3a and the optical waveguide 3 are formed into one piece, but the present invention is not limited thereto, and the keytop 3a can be a separate transparent or semi-transparent member having translucent properties.

Therefore, the waveguide in according to the specification is a flexible piece of translucent material to direct and propagate light. The waveguide 17 in LaPointe is a sheet of translucent rubbery material overlays an electroluminescent lamp 19 (LaPointe col. 3, lines 43-65).

The Examiner clearly states his position in the above rejection on the waveguide. LaPointe meets the claimed invention.

- Applicant argues the phosphor material in LaPointe is different from the phosphor recited in the present invention by which light emitted from the LED is converted into light of a different wavelength. Claim 1 claims “a phosphor emitting visible light by being excited by the light from the light source is contained in a path through which the light of the light source is guided”. LaPointe discloses the phosphor is in electroluminescent layer 31 (LaPointe col. 5, lines 40-47). The definition of a phosphor in Webster’s dictionary (10th Edition) is:

“A substance that emits light when excited by radiation.”

LaPointe discloses a phosphor material is excited by the light of the electroluminescent layer 31. LaPointe meets the claimed limitation.

- Claims 20-23 (in current form) is drawn to Species II, a backlight structure, which is a non-elected species. Newly amended claims 20-23 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Please see the Requirement for Restriction/Election mailed 9/13/05.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 20-23 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

- Applicant argues the backlight in claim 24 has not been discussed in the rejection. However, the electroluminescent layer 31 in LaPointe is a backlight.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wai-Sing Louie
Patent Examiner

Wsl
April 25, 2006.